

Burroughs Corporation



ELECTRIC COMPONENTS DIVISION
PLAINFIELD, NEW JERSEY 07061

FIRST CLASS

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ELECTRONIC COMPUTER DIV. • PLAINFIELD, N. J.

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PLAINFIELD, NEW JERSEY 07061
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November 29, 1968

Mr. T. Nelson, Systems Consultant
Box 3
Schooleys Mountain, New Jersey 07870

Dear Mr. Nelson:

Attached are copies of the information you requested at the S.I.D. National Technical Conference. If you have any potential application for either the Glow Modulator Tubes or the Dot Matrix Panel Displays, we would be very pleased to discuss them with you.

Thank you for your interest.

Very truly yours,

Thomas C. Maloney
Manager, Display Device Development

TCM/jf
Enclosure

cc: J. Bethke

Burroughs Corporation



ELECTRONIC COMPONENTS DIVISION

PLAINFIELD, NEW JERSEY 07061

August 15, 1968

GLOW MODULATOR TUBE

Burroughs Glow Modulator Tube interfaces directly with multiple real-time inputs without multiplexing.

The Glow Modulator Tube (GMT) is a new display device utilizing cold cathode glow discharge as the light emitting mechanism. Physically, the GMT consists of an array of glow cavities mounted in a single envelope. When the tube is optically scanned, a raster of contiguous lines is presented.

Features:

- Small size
- Precise array of independent glow cavities: up to 177
- High brightness: up to 10,000 ft. lamberts
- Dynamic brightness range: up to 1,000:1
- Frequency response: beyond 50 KHz
- Drive simplicity, low power, light weight, compact size - as compared to CRT Systems
- High reliability

Typical Applications

- Imaging systems
- Medical transducers
- Strain gauges
- Thermocouples
- Pulse height or spectrum analyzer bins
- Statistical distribution classifiers

In the bar graph demonstration system, an array of thirty potentiometers simulates a set of parallel analogue data lines. The Glow Modulator Tube is placed within a rotating optical scanning drum. The row of glow cavities provides the horizontal dimension, and the scanning drum the vertical. The voltage from each potentiometer is compared to a scansynchronous ramp and the associated glow cavity is switched "on" when the voltages cross. The height of each bar is thus a function of the input signal. A linear function has been used in the demonstration. Additional cavities are used to generate a reference graticule.

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April 17, 1968

PLASMA DISPLAY PANEL

The Burroughs Plasma Panel Display currently under development consists of a regular array of very small gas discharge cells, with inherent bistable memory, and row and column address. The advantages of good brightness, compact structure, and system compatibility are characteristic of this effective and economical device for information display.

The general structure of these devices consists of three thin glass sheets assembled as a sandwich and sealed at the edges. The center sheet is perforated in a regular fine pattern. Conductive electrodes are provided on the front and back rows on one side, columns on the other - intersecting over each perforation or cell. The assembly is filled with a gas at a suitable pressure. Immediate development goals are for panels up to 5 inch square with densities of 2500 dots per square inch. Larger displays are also planned.

Operation of the Panel in a system is somewhat like that of a magnetic core memory. In order to switch a cell "on," or turn it "off," "write" or "erase" signals are routed to the associated row and column electrodes. This is the familiar 2D address configuration. So long as sustaining power is provided, a "written" cell will remain lit until "erased".

The physical phenomena of the discharge in these small cells are quite involved. Published reports of work in this general area have indicated some significant difficulties such as the problem of initial ionization. In this respect, experimental systems which Burroughs has been developing are several orders of magnitude more favorable than the systems reported. The operating voltages have been reduced by a factor of 4 or more, so that available solid state components can serve throughout the electronic section.

Several further possibilities are under investigation. Burroughs engineers have demonstrated red, green and blue displays, and also three colors in a single device. Concepts are being evolved and tested for the storage of multiple brightness levels, which will lead to continuous tone displays.

This display panel and the technology which is being evolved around it, promise a range of flexible and economical systems with excellent performance.